In the next sections he shows that the penetrating and magnifying powers, so far from assisting each other, will often prove reciprocally detrimental, which he thinks may be explained by admitting that while the light collected is employed in magnifying an object, it cannot be exerted in giving penetrating power, to which perhaps ought to be added the detrimental effect of the magnifying power on the heterogeneous ingredients floating in the atmosphere. Whatever be the cause, the fact is proved by various observations.

Lastly, he shows that as we must not limit our vision within the sphere of the single stars, we must call the united lustre of the sidereal system to our aid in stretching forward into space. Supposing one of these clusters of 5000 stars to be at one of those immense distances to which only a 40-feet reflector can reach, he calculates that this distance will exceed at least 300,000 times that of the most remote fixed star visible to the naked eye. He concludes with a rough calculation how much time it would take to sweep the heavens with a penetrating power of such an immense extent; and finds that in this climate, with his 40-feet reflector, with a magnifying power of 1000, this operation for the whole sphere would take no less than 811 years.

A second Appendix to the improved Solution of a Problem in physical Astronomy, inserted in the Philosophical Transactions for the Year 1798, *containing some further Remarks, and improved Formulæ for computing the Coefficients* A *and* B *; by which the arithmetical Work is considerably shortened and facilitated. By the Rev.* John Hellins, *B.D.F.R.S. and Vicar of* Potter's Pury *in* Northamptonshire. Read Dec. 12, 1799. [*Phil. Trans.* 1800, *p.* 86.]

This paper relates to an improved solution of a problem by which swiftly converging series are obtained, which are useful in computing the mutual perturbations of the planets; and contains some further remarks and improved formulæ for computing the coefficients, by which the arithmetical work is considerably shortened and facilitated.

Account of a Peculiarity in the Distribution of the Arteries sent to the Limbs of slow-moving Animals; together with some other similar Facts. In a Letter from Mr. Anthony Carlisle, *Surgeon, to* John Symmons, *Esq. F.R.S.* Read Jan. 9, 1800. [*Phil. Trans.* 1800, *p.* 98.]

This peculiarity was first observed in the axillary arteries and in the iliacs of the Lemur tardigradus, which at their entrance into the upper and lower limbs were found to be suddenly divided into a considerable number of equal-sized cylinders, which occasionally anastomosed with each other, and were regularly distributed on the muscles; whilst the arteries proceeding to the other parts of the body divided in the usual arborescent form.

Upon prosecuting this inquiry, it was found that the Bradypus